

U.S. Patent Appln. No. 09/697,465
Response to Office Action mailed 3/13/2003

Docket No. 5785-23

LISTING OF CLAIMS

1 1.12. (Previously Withdrawn)

1 13.-18.(Previously Cancelled)

1 19.-20.(Previously Withdrawn)

1 21. (Previously Amended) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:

4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;

6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 selectively positioning at least one rigid point compressive load bearing member
8 between portions of said foam core along areas of anticipated point compression loading in
9 a location to prevent compression of said foam core when a point compressive load is
10 applied to said point compressive load bearing members; and
11 selecting at least one of a structure and a material of said rigid point compressive
12 load bearing member so that it has a greater resistance to compression as compared to a
13 remaining portion of said panel exclusive of said rigid point compressive load bearing
14 member.

1 22. (Previously Amended) The method according to claim 21 further comprising the step
2 of selecting said point compressive load bearing member to be an elongated channel
3 formed of a material selected from the group consisting of steel, aluminum and a metal
4 alloy.

1 23. (Previously added) The method according to claim 21 further comprising the step of
2 forming at a periphery of said opposing panel surfaces a plurality of fabric tabs attached to
3 at least one of said first and s cond fabric layers.

1 24. (Previously add d) The method according to claim 21 further comprising the step of
2 laminating said panel into a composite boat hull to form a transom.

1 25. (Previously added) The method according to claim 21 further comprising the step of
2 positioning said rigid point compressive load bearing member in a location selected from
3 the group consisting of between said first and said second fabric layer, and within an
4 elongated channel defined in one of said opposing panel surfaces.

1 26. (Previously added) The method according to claim 25 wherein said elongated
2 channel has a cross-sectional profile that matches a cross-sectional profile of said rigid
3 point compressive load bearing member.

1 27. (Previously added) The method according to claim 26 further comprising the step of
2 forming said rigid point compressive load bearing member from a structural foam with an
3 outer fabric layer.

1 28. (Previously added) The method according to claim 27 further comprising the step of
2 applying resin to mating surfaces of the rigid point compressive load bearing member and
3 said elongated channel prior to positioning said rigid point compressive load bearing
4 member in said channel.

1 29. (Previously added) The method according to claim 28 further comprising the step of
2 forming fabric flaps on said rigid point compressive load bearing member and applying resin
3 to said flaps and a flap mating portion of said panel surface to bond said flaps to said panel.

1 30. (Previously added) The method according to claim 25 further comprising the step of
2 injecting a curable structural foam in a space between said opposing panel surfaces while
3 constraining the first and second fabric layers from movement so as to form said foam core.

1 31. (Previously added) The method according to claim 30, further comprising the step of
2 constraining said foam under a molding pressure selected to cause said foam to penetrate
3 only partially through an inner thickness of said first and second fabric layers so as to leave
4 an outer exposed portion of said fabric layer free of said structural foam.

1 32. (Previously added) The method according to claim 30 further comprising the step of
2 attaching a non-woven fabric layer to a reinforcing fabric layer to form each of said first and
3 second fabric layers

1 33. (Previously added) The method according to claim 32 further comprising the step of
2 arranging said first and second fabric layers so that said reinforcing fabric layer forms an
3 outer panel surface and said non-woven fabric layer forms an inner panel surface.

1 34. (Previously added) The method of claim 32, further comprising the step of selecting
2 said reinforcing fabric layer from the group consisting of fiberglass, carbon fibers, aramid
3 fibers, linear polyurethane fibers, polypropylene fibers, and polyester.

1 35. (Currently Amended) The method of claim 32, further comprising the step of
2 selecting the non-woven fabric layer from the group consisting of polyester staple mat, glass
3 fiber mat, a continuous thermoplastic fiber which is needle punched to form a felt-like fabric,
4 or other organic and inorganic fiber mats and fabrics.

1 36. (Cancelled)

1 37. (Previously added) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:

4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;

6 positioning a rigid point compressive load bearing member between said first and
7 second fabric layers along areas of anticipated point compression loading; and

8 injecting a foam core between at least a portion of said first and second fabric layers
9 to form said panel, wherein said rigid point compressive load bearing member prevents
10 compression of said foam core when a point compressive load is applied to said point
11 compressive load bearing member.

1 38. (Previously added) The method according to claim 37 further comprising the step of
2 injecting a foam core into said rigid point compressive load bearing member.

1 39. (Previously added) The method according to claim 37 further comprising the step of
2 selecting said rigid point compressive load bearing member to be an elongated channel
3 formed of a material selected from the group consisting of steel, aluminum and a metal
4 alloy.

1 40. (Previously added) A method for manufacturing a composite boat transom
2 comprising the steps of:
3 positioning a first fabric layer spaced from a second fabric layer to form opposing
4 transom surfaces;
5 positioning elongated rigid channel members between said first and second fabric
6 layers aligned with locations corresponding to areas of anticipated point compressive
7 loading; and
8 injecting a foam core between said first and second fabric layers.

1 41. (Previously added) The method according to claim 40 further comprising the step of
2 aligning said elongated rigid channel members with an anticipated location of a bolt for an
3 outboard motor bracket.

1 42. (Previously added) The method according to claim 41 further comprising the step of
2 selecting said elongated rigid channel members to be formed of metal.

1 43. (Previously added) The method according to claim 40 further comprising the step of
2 injecting said foam core within said rigid channel members.

1 44. (Previously added) The method according to claim 40 further comprising the step of
2 forming said first and second fabric layers to include fabric flaps at a periphery of said
3 composite transom.

1 45. (Previously added) The method according to claim 44 further comprising the step of
2 positioning said composite transom to form part of a composite boat hull and laminating
3 said exposed reinforcing fabric flaps into said composite boat hull.

1 46. (Previously added) The method according to claim 40 wherein said injecting step
2 further comprises causing said foam core to penetrate at least partially into interstices of
3 said fabric layer to bind said foam core to said fabric layers.

1 47. (Previously added) A method for manufacturing a composite boat transom
2 comprising the steps of:

3 positioning a first fabric layer spaced from a second fabric layer to form opposing
4 transom surfaces;

5 positioning elongated rigid channel members between said first and second fabric
6 layers aligned with locations corresponding to areas of anticipated point compressive
7 loading associated with an outboard motor bracket;

8 injecting a foam core between said first and second fabric layers; and

9 causing said foam core to penetrate at least partially into interstices of said fabric
10 layers to bind said foam core to said fabric layers

1 48. (Previously added) The method according to claim 47 further comprising the step of
2 selecting said elongated rigid channel members to be formed of metal.

1 49. (Previously added) The method according to claim 48 further comprising the step of
2 injecting said foam core within said rigid channel members.

1 50. (Previously added) The method according to claim 47 further comprising the step of
2 forming said first and second fabric layers to include fabric flaps at a periphery of said
3 composite transom.

1 51. (New) A method of forming high strength panels suitable for use in applications
2 requiring a capability to withstand point compression loading without deformation,
3 comprising the steps of:

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4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 positioning at least one rigid point compressive load bearing member between
8 portions of said foam core along areas of anticipated point compression loading in a
9 location to prevent compression of said foam core when a point compressive load is applied
10 to said point compressive load bearing members; and
11 selecting said point compressive load bearing member to be an elongated channel
12 formed of a material selected from the group consisting of steel, aluminum and a metal
13 alloy.

1 52. (New) A method of forming high strength panels suitable for use in applications
2 requiring a capability to withstand point compression loading without deformation,
3 comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 positioning at least one rigid point compressive load bearing member between
8 portions of said foam core along areas of anticipated point compression loading in a
9 location to prevent compression of said foam core when a point compressive load is applied
10 to said point compressive load bearing members; and
11 forming at a periphery of said opposing panel surfaces a plurality of fabric tabs
12 attached to at least one of said first and second fabric layers.

1 53. (New) A method of forming high strength panels suitable for use in applications
2 requiring a capability to withstand point compression loading without deformation,
3 comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 positioning at least one rigid point compressive load bearing member between
8 portions of said foam core along areas of anticipated point compression loading in a

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9 location to prevent compression of said foam core when a point compressive load is applied
10 to said point compressive load bearing members; and
11 laminating said panel into a composite boat hull to form a transom.

1 54. (New) A method of forming high strength panels suitable for use in applications
2 requiring a capability to withstand point compression loading without deformation,
3 comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 positioning a rigid point compressive load bearing member between said first and
7 second fabric layers along areas of anticipated point compression loading; and
8 injecting a foam core between at least a portion of said first and second fabric layers
9 to form said panel, wherein said rigid point compressive load bearing member prevents
10 compression of said foam core when a point compressive load is applied to said point
11 compressive load bearing member; and
12 injecting a foam core into said rigid point compressive load bearing member.

1 55. (New) A method of forming high strength panels suitable for use in applications
2 requiring a capability to withstand point compression loading without deformation,
3 comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 positioning a rigid point compressive load bearing member between said first and
7 second fabric layers along areas of anticipated point compression loading; and
8 injecting a foam core between at least a portion of said first and second fabric layers
9 to form said panel, wherein said rigid point compressive load bearing member prevents
10 compression of said foam core when a point compressive load is applied to said point
11 compressive load bearing member; and
12 selecting said rigid point compressive load bearing member to be an elongated
13 channel formed of a material selected from the group consisting of steel, aluminum and a
14 metal alloy.